Calendar No. 468

98TH CONGRESS, 1st Session | SENATE | REPORT No. 98-271

AUTHORIZING FEASIBILITY INVESTIGATIONS

OCTOBER 7 (legislative day, OCTOBER 3) 1983.—Ordered to be printed

Mr. HATFIELD (for Mr. MCCLURE), from the Committee on Energy and Natural Resources, submitted the following

REPORT

together with

ADDITIONAL and MINORITY VIEWS

[To accompany S. 622]

The Committee on Energy and Natural Resources, to which was referred the bill (S. 622) to authorize the Secretary of the Interior to undertake feasibility investigations, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill (as amended) to pass.

The amendment is as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

"That the Secretary of the Interior is hereby authorized to engaged in feasibility studies of the following proposals:

"(1) Colville Indian Reservation, Chief Joseph Dam project, located in northeastern Washington;

"(2) Imperial Irrigation District canal lining and other water conservation practices, located in Imperial Irrigation District, Imperial County in southern California;

"(3) New Melones conveyance system study, Central Valley Project, Stanislaus River division, located in Tuolumne, Calaveras, Stanislaus, San Joaquin, and Merced Counties, California;

"(4) Prairie Bend unit, located in the Platte River Basin, located in Dawson, Buffalo, and Hall Counties, Nebraska, such feasibility study shall include a detailed report on any effects the proposed project may have on wildlife habitat, including habitat of the sandhill crane and the endangered whooping crane;

"(5) Spring Canyon pumped-storage project, located in Mohave County, Arizona;

"(6) Tongue River Dam, located in Big Horn and Rosebud Counties, Montana;

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"(7) Upper Klamath offstream storage study, Klamath project, located in Klamath County Oregon;

"(8) Blue Holes Reservoir, located in Fremont County and the Wind River Indian Reservation, Wyoming;

"(9) Muddy Creek Basin hydrologic, surge relief, and erosion control study, near Great Falls, Montana;

(10) San Joaquin Valley Ground/Surface Water Integration Study, Central Valley Project, located in San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern Counties, California;

"(11) Delta Channel Constriction Investigation Central Valley Project, located in Sacramento and San Joaquin Counties, California;

"(12) Deep Carbonate Aquifer Project, located in Clark, Lincoln, and Nye Counties, Nevada;

"(13) Arizona Upper Gila study, located in Greenlee and Graham Counties, Arizona;

"(14) San Juan River Unit, Colorado River Water Quality Improvement Program, Located in Arizona, Colorado, New Mexico, and Utah;

"(15) Mesa Delta Municipal and Industrial Ground Water Study, located in Mesa and Delta Counties, Colorado;

"(16) Southeast Oklahoma Water Supply and Distribution Study, located in Choctow, McCurtain, Pushmatoha, Garvin, Pontotoc, Coal Murray, Johnston, Atoka, Marshall, Bryan, Love, Carter, Lincoln, Pottawatomie, Seminole, Hughes, and Okfuskee Counties, Oklahoma;

"(17) Northwest Oklahoma Water Supply Project, located in Cimarron, Texas, Beaver, Harper, Woods, Ellis, Woodward, and Dewey Counties, Oklahoma;

"(18) Westside Irrigation Project, located in Washakie and Big Horn Counties, Wyoming;

"(19) Crow Creek Indian Reservation Area, located in the Crow Creek Indian Reservation within South Dakota;

"(20) Rapid City Regional Water Supply, located in Pennington County, South Dakota;

"(21) Saline Water Use and Disposal Opportunity Unit, Colorado River Water Quality Improvement Program, located in Colorado, Utah, Wyoming, Nevada, New Mexico, Arizona, and California; and

"(22) Sites Reservoir Investigation, Sacremento River Division, Central Valley Project, located in Glenn and Colusa Counties, California.".

PURPOSE

The purpose of S. 622 as recommended by the Committee is to authorize the Secretary of the Interior to undertake feasibility investigations of 22 water resources related developments in 13 Western States.

BACKGROUND AND NEED

Section 8 of the Federal Water Project Recreation Act (Public Law 89–72, 79 Stat. 213) provides:

> SEC. 8. Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, any other provisions of law to the contrary notwithstanding.

The studies listed in the bill, S. 622 based upon appraisal studies conducted by the Department of the Interior's Bureau of Reclamation, appear to warrant feasibility investigations. S. 622 would provide the authority required by Public Law 89–72 for the feasibility level studies listed in the text of the measure.

Feasibility investigations

As recommended by the Senate Committee on Energy and Natural Resources, S. 622 authorizes the Secretary of the Interior to undertake the following feasibility level investigations:

1. Colville Indian Reservation, Chief Joseph Dam Project, Washington. The estimated cost of the three year study is $795,000. The appraisal level report prepared by the Bureau of Reclamation identifies 17 independent areas which appear to have potential for development of water resources related to irrigation, fish and wildlife, and/or environmental quality enhancement. The proposed feasibility investigation would cover water resource development potential for the entire Colville Indian Reservation.

2. Imperial Irrigation District Canal Living, California.—The estimated cost of the two year study is $1,000,000. The feasibility investigation will determine the costs and benefits to be derived from the lining of canals in the Imperial Irrigation District with concrete to prevent water loss and other water conservation practices. Preliminary analysis from the appraisal level study indicates that a water saying of approximately 200,000 acre feet of water annually can be achieved by lining 400 miles of presently unlined canals. This would be a water conservation project which could help alleviate future water shortages.

3. New Melones Conveyance System, Central Valley Project, California.—The estimated cost of the four year study is $1,300,000. The investigation will formulate a plan to provide diversion and conveyance facilities from New Melones Reservoir to meet anticipated supplemental water needs in Tuolumne, Calaveras, Stanislaus, San Joaquin, and Merced Counties and other areas near or adjacent to the Stanislaus River that could be served with water from the existing New Melones Reservoir. In addition to agricultural needs, the study will address anticipated municipal and industrial fishery recreation and water quality supply needs.

4. Prairie, Bend Unit, Pick-Sloan Missouri Basin Program, Nebraska.—The estimated cost of the four year study is $1,050,000. The study will examine the potential for irrigation of up to 70,000 acres utilizing water from the Platte River and stabilization of groundwater levels over an area of about 136,000 acres. Multi-objective planning will also examine the potential for outdoor recreation and the enhancement of habitat for waterfowl including the endangered whooping crane.

5. Spring Canyon Pumped-Storage Project, Arizona.—The estimated cost of the three year study is $1,300,000. The objective of the study is to analyze the potential for development of a 4,000 megawatt pumped-storage peaking facility located on a dry wash within the Lake Mead National Recreation Area. Information supplied to the Committee by the Bureau of Reclamation indicates that "response of the public during public meetings was favorable with no adverse reactions being expressed".

6. Tongue River Dam, Montana.—The estimated cost of this three year study is $275,000. The Tongue River Dam is a Montana State operated facility and presently provides a firm annual yield of 40,000 acre feet of water for agricultural purposes of which 7,500 acre feet is used on the Northern Cheyenne Indian Reservation.

The Tongue River Dam is considered an unsafe structure and the State of Montana has funded several studies to find ways to correct unsafe conditions and provide additional storage. The State intends to provide some funds for the study as well as the information compiled by the State. Should the feasibility study result in proposal of a project, it is anticipated that authorizing legislation would provide for a joint State-Federal project.

7. Upper Klamath Offstream Storage, Oregon.—The estimated cost of the three year study is $1,125,00. The proposed pumped-storage plan would store flows from Upper Klamath Lake in sites known as Long, Round, and Aspen Lakes, for later release through generation facilities as well as existing and expanded downstream generating facilities located on the Klamath River. In addition to power generation, the multi-purpose study will also examine the potential for irrigation, municipal and industrial water supply, recreation, and fishery and water quality benefits.

8. Blue Holes Reservoir, Wyoming.—The estimated cost of the three year study is $670,000. Blue Holes is a potential reservoir site on the Wind River approximately 1.5 miles downstream from Dinwoody Creek. The proposed reservoir would provide a total storage capacity of 357.000 acre feet and a firm yield of 174,000 acre feet annually to be used for irrigation, hydroelectric power generation, municipal and industrial water supply, recreation, and fish and wildlife benefits. The dam would be an earthfill structure 265 feet high and 5,800 feet in length. Of particular note is the action by the Wyoming State Legislature of appropriating $500,000 to be used for the feasibility investigation. The Bureau of Reclamation has been requested by the Wyoming State Water Development Commission to initiate a feasibility level study with the State funds.

9. Muddy Creek Basin, Montana.—The estimated cost of the two year study is $200,000. The Muddy Creek Basin is located near Great Falls, Montana. The purpose of the study is to determine the feasibility of constructing a reservoir on Muddy Creek to reduce erosion. In addition, the Soil Conservation Service has sponsored a program to reduce inflow of sediment laden waters into the drainage. It is estimated that effective implementation of the SCS program and construction of the reservoir would result in an annual reduction of the sediment load from 213,000 tons to an estimated 147,800 tons.

10. San Joaquin Valley Ground Water/Surface Water, California.—The estimated cost of the two year study is $600,000. The study area includes all or portions of San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern Counties in California. The purpose of the study is to determine the need for additional imported water supplies to prevent ground water overdraft and to provide for anticipated future demands for additional irrigation and municipal and industrial water supplies.

11. Delta Channel Constriction, California.—The estimated cost of the four year study is $1,575,000. The study area encompasses the San Joaquin/Sacramento Rivers delta to the east of San Francisco Bay in California. The study will formulate and analyze a plan to deliver additional quantities of water through the Delta

while maintaining existing beneficial water uses in the Delta and protection for the Delta environment.

12. Deep Carbonate Aquifer, Nevada.—The estimated cost of this five year study is $2,500,000. The study area includes portions of Clark, Lincoln, and Nye Counties in southern Nevada. It is estimated that the existing water supply in the Las Vegas Valley areas is sufficient to meet peak demands through the year 2005. The purpose of the study is to establish the potential of the deep carbonate aquifer as a source of water to satisfy peak demands in the area as well as projected demands beyond the year 2030.

13. Arizona Upper Gila, Arizona.—The estimated cost of this two year study is $400,000. The study location is in Greenlee and Graham Counties, Arizona, and will examine the feasibility of providing water supplies from the Central Arizona Project to the San-Carlos Apache Indian Reservation and mining industries in the Safford and Morenci areas. Other study objectives will include reduction of flood damages, hydropower, recreation, and environmental enhancement.

14. San Juan River Unit, Arizona, Colorado, New Mexico, and Utah.—The estimated cost of this three year study is $1,400,000. The study would investigate sources of salinity from the San Juan River's headwaters in south-central Colorado to where the River enters Lake Powell behind Glen Canyon Dam on the Colorado River. Methods of salt control to be examined by the study will include, but not limited to, lining of water supply canals, pumping of saline ground water reservoirs, interception of flows from saline springs, and collection of saline waters for potential industrial uses.

15. Mesa-Delta M&I Groundwater, Colorado.—The estimated cost of this four year study is $1,250,000. The study will examine the potential for developing ground water supplies in Mesa and Delta counties in western Colorado for purposes of supplying the towns of Palisade, Clifton, Grand Junction, and Fruita. Estimates of water demand indicate that serious shortfalls will occur in the locale by the year 2020. In addition to addressing the question of water supply, the study will also evaluate the feasibility of hydroelectric power generation utilizing the conveyance system.

16. Southeast Oklahoma Water Supply, Oklahoma.—The estimated cost of the three and a half year study is $725,000. The study area is located in state planning districts 2 and 3 in south-central Oklahoma. The study will examine plans for water supply, treatment, and distribution to meet the study area needs. The study will provide for a review of municipal and industrial water demands projected by the State of Oklahoma and preparation of design and cost estimates for water conveyance systems to deliver water from existing reservoirs as well as the potential of new storage sites.

17. Northwest Oklahoma Water Supply, Oklahoma.—The estimated cost of the four year study is $670,000. The study area is in northwest Oklahoma in an area of chronic water deficiency. Numerous small communities have, or are projected to have, needs for additional municipal and industrial water supplies. Currently, the groundwater table in the area is declining and, as this is the only reliable supply, additional sources must be utilized. The study will be a comprehensive analysis of all potential sources of water both within and outside the study area. Of particular note, is the intent

to examine the feasibility of demineralizing existing water supplies of poor quality.

18. Westside Irrigation Project, Wyoming.—The estimated cost of the three year study is $260,000. The study area is located in Washakie and Big Horn Counties in Wyoming. The study will examine the feasibility of irrigating up to 9,000 acres of land located near Worland, Wyoming by enlarging the existing Big Horn Canal so as the increase delivery capability and also modifying other canal structures.

19. Crow Creek Reservation, South Dakota.—The estimated cost of the two year study is $200,000. The study will assess the irrigation potential of lands within the Crow Creek Indian Reservation in South Dakota. The study will also examine the potential for furnishing water supplies for private irrigation and rural-domestic water systems in nearby areas of the reservation. An abundant water source exists in Lakes Sharpe and Francis formed by Big Bend and Fort Randall Dams on the Missouri River.

20. Rapid City Water Supply, South Dakota.—The estimated cost of the two year study is $125,000. The study will determine the long-range multiple purpose water supply needs in the Rapid City area in relation to existing and potential sources.

21. Saline Water Use and Disposal, Colorado, Utah, Wyoming, Nevada, New Mexico, Arizona, and California.—The estimated cost of this three year study is $2,200,000. The study will evaluate alternative plans for collecting, treating, and transporting saline water for use or disposal. Plans to be developed would be alternatives to conventional methods of disposing of saline water which include evaporation ponds and desalination plants. Emphasis will be placed on beneficial uses of saline water including the feasibility of using saline water as the transport medium in a pipeline carrying coal to the Pacific Coast.

22. Sites Reservoir, California.—The estimated cost of the three year study is $750,000. The study area is located in Glen and Colusa Counties in Northern California. The proposed project would be an offstream storage reservoir formed by two dams and 12 dikes with a capacity of 1,800,000 acre feet. The project would be operated in conjunction with existing Central Valley Project and Solano Project features and would be included as a unit of the Central Valley Project. It is estimated that the project would provide a firm yield of 570,000 acre feet of water annually to be used for water supply in the San Joaquin Valley and Southern California. The study will also examine the potential for hydroelectric power generation and the development of recreation opportunities.

LEGISLATIVE HISTORY

S. 622 was introduced by Senator McClure on March 1, 1983. A hearing was held before the Subcommittee on Water and Power on May 2, 1983 at which time the Administration supported passage of the bill with amendments. As reported, the bill also includes study authority similar to that which would be authorized by S. 681 introduced on March 3, 1983 by Senator Exon.

During the 97th Congress a similar bill, S. 2443, was reported by the Committee on May 18, 1982 (S. Rpt. 97-401). On October 1,

1982, the text of S. 2443 was inserted in lieu of the text of H.R. 5536 and H.R. 5536 was returned to the House. On December 18, 1982, H.R. 5536 was sent back to the Senate with a further amendment but no action was taken.

COMMITTEE RECOMMENDATION AND TABULATION OF VOTES

The Senate Committee on Energy and Natural Resources, in open business meeting on October 4, 1983, by vote of a quorum present recommends that the Senate pass S. 622 if amended as described herein.

The rollcall vote on reporting the measure was 15 yeas, 4 nays as follows:

YEAS	NAYS
Mr. McClure	Mr. Heinz*
Mr. Hatfield	Mr. Metzenbaum
Mr. Weicker*	Mr. Tsongas
Mr. Domenici	Mr. Bradley
Mr. Wallop*	
Mr. Warner	
Mr. Murkowski	
Mr. Nickles	
Mr. Hecht	
Mr. Chafee	
Mr. Evans*	
Mr. Johnston	
Mr. Ford	
Mr. Matsunaga	
Mr. Melcher	

*Indicates voted by proxy.

COMMITTEE AMENDMENT

The Committee adopted an amendment in the nature of a substitute. The amendment deletes from the bill as introduced four study authorizations which were included in Public Law 98-63 (supplemental appropriations for the fiscal year ending September 30, 1983) and adds study authority for 13 additional studies which were recommended by the Administration. The amendment also provides for study of "other water conservation practices" as part of the Imperial Irrigation District canal lining study and expands the Prairie Bend unit study to include Dawson County.

COST AND BUDGETARY CONSIDERATIONS

The following estimate of costs of this measure has been provided by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, D.C., October 6, 1983.

Hon. JAMES A. MCCLURE,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Dirksen Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN; Pursuant to Section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has reviewed S. 622, a bill to authorize the Secretary of the Interior to undertake feasibility investigation, as ordered reported by the Senate Committee on Energy and Natural Resources, October 4, 1983.

The bill authorizes the Secretary of the Interior to engage in feasibility investigations for 22 federal water resources projects. Assuming necessary funds are appropriated for all of the studies beginning in fiscal year 1984, and based on information from the Department of the Interior, it is estimated that these studies would cost about $23 million between 1984 and 1988. Outlays would be approximately $4 million in fiscal year 1984, $9 million in fiscal year 1985, and $6 million in fiscal year 1986, $3 million in fiscal year 1987, and less than $1 million in fiscal year 1988.

Enactment of this bill would not affect the budgets of state and local governments.

Should the Committee so desire, we would be pleased to provide further details on this estimate.

Sincerely,

JAMES BLUM
(For Rudolph G. Penner, Director).

REGULATORY IMPACT EVALUATION

In compliance with paragraph 11(b) of Rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred on the passage of S. 622.

It is the Committee's opinion that the bill is not a regulatory measure in the sense of imposing Government established standards or significant responsibilities on private individuals or businesses and that little, if any, additional paperwork would result from enactment of S. 622 other than that which would normally be associated with such a Federal study program.

EXECUTIVE COMMUNICATIONS

The pertinent legislative reports received by the Committee from the Department of the Interior and the Office of Management and Budget setting forth Executive agency recommendations relating to S. 622 are set forth as follows:

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., May 9, 1983.

Hon. JAMES A. MCCLURE,
Chairman, Committee on Energy and Natural Resources,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This responds to your request for our view on S. 622, a bill "To authorize the Secretary of the Interior to undertake feasibility investigations."

We support enactment of S. 622 with the amendments discussed in this report.

S. 622 would authorize the Secretary of the Interior to undertake feasibility investigations in connection with 13 water resource developments.

We recommend feasibility authorization for 12 of the investigations included in the bill. However, we do not support feasibility study authorization for the Upper Klamath Offstream Storage Project because recent appraisal evaluation shows that there are significant geologic problems in the proposed reservoir site area related to the volcanic origin of the region. As a result, we seriously question the feasibility of storing water in the reservoir site due to leakage through fractures that are remnants of past volcanic activity. Therefore, our appraisal report, scheduled for completion in fiscal year 1983, will not recommend further study.

We strongly support inclusion in S. 622 of the Saline Water Use and Disposal Opportunity Unit, which includes AQUATRAIN. We are presently conducting preliminary studies on AQUATRAIN, a proposed pipeline to transport both saline water and coal from the Upper Colorado River Basin to potential users in the Western States. We believe that the Saline Water Use and Disposal Opportunity Unit could encourage joint ventures between the Federal Government and private industry, reduce the cost of saline water disposal, and utilize saline water which would otherwise not be usable.

We also recommend that the Imperial Irrigation District canal lining investigation name be expanded to include "system improvement". This would enable us to study various other ways of conserving water, in addition to canal lining.

Finally, we recommend that the bill be amended to include 15 more project studies, bringing the total number of studies to 27. Feasibility authority for all 27 studies is needed before we can initiate investigations for these proposals under our new planning process.

Specific language for implementing our recommendations on S. 622 is enclosed.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

GARREY E. CARRUTHERS,
Assistant Secretary.

Enclosure.

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DEPARTMENT OF THE INTERIOR SUGGESTED AMENDMENTS TO S. 622

1. On page 1, line 9, after "lining" insert "and system improvement".

2. On page 2, line 8, after "in" insert "Dawson,".

3. On page 2, strike out lines 22 and 23.

4. Redesignate sections 12 and 13 as sections 11 and 12, respectively.

5. On page 3, insert the following after line 5:

(13) Palisades Powerplant Enlargement, Palisades Project, located in Bonneville County, Idaho;

(14) Palisades Powerplant Enlargement, Palisades Project, second phase, located in Bonneville County, Idaho;

(15) San Joaquin Valley Ground water/Surface Water Integration Study, Central Valley Project, located in San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern Counties, California;

(16) Delta Channel Constriction Investigation, Central Valley Project, located in Sacramento and San Joaquin Counties, California;

(17) Deep Carbonate Aquifer Project, located in Clark, Lincoln and Nye Counties, Nevada;

(18) Arizona Upper Gila Study, located in Greenlee and Graham Counties, Arizona;

(19) San Juan River Unit, Colorado River Water Quality Improvement Program, located in Arizona, Colorado, New Mexico, and Utah;

(20) Mesa Delta Municipal and Industrial Ground Water Study, located in Mesa and Delta Counties, Colorado;

(21) Southeast Oklahoma Water Supply and Distribution Study, located in Choctaw, McCurtain, Pushmatoha, Garvin, Pontotoc, Coal Murray, Johnston, Atoka, Marshall, Bryan, Love and Carter Counties, Oklahoma;

(22) Northwest Oklahoma Water Supply Project, located in Climarron, Texas, Beaver, Harper, Woods, Ellis, Woodward, and Dewey Counties, Oklahoma;

(23) Westside Irrigation Project, located in Washakie and Big Horn Counties, Wyoming;

(24) Crow Creek Indian Reservation Area, located in the Crow Creek Indian Reservation within South Dakota;

(25) Rapid City Regional Water Supply, located in Pennington County, South Dakota;

(26) Saline Water Use and Disposal Opportunity Unit, Colorado River Water Quality Improvement Program, located in Colorado, Utah, Wyoming, Nevada, New Mexico, Arizona, and California;

(27) Sites Reservoir Investigation, Sacramento River Division, Central Valley Project, located in Glenn and Colusa Counties, California.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: PN

Project: Colville Indian Reservation, Chief Joseph Dam Project, Washington.

Location: The Colville Indian Reservation is located in northeastern Washington in the vicinity of the Columbia and Okanogan Rivers.

Project Data: Designs and cost estimates are of appraisal level and were derived for the appraisal investigation, Colville Indian Reservation and adjacent areas, July 1979. The appraisal report identifies 17 independent areas which appear to have potential for some type of development including irrigation, fish, and wildlife, and environmental quality enactment. Data on three of the most promising areas are included below.

North Nespelem Area

Total construction cost	$1,457,000
Adjustments	15,000
Total allocation	1,472,000
Program goals:	*Cost allocation*
Irrigation	$458,000
Municipal and industrial	476,000
Recreation	340,000
Fish and wildlife	181,000
Migratory waterfowl	2,000
Archeology	15,000
Benefit-cost ratio	2.54

Owhi Flat Area

Total construction cost	$447,000
Adjustments	4,000
Total allocation	451,000
Program goals:	*Cost allocation*
Irrigation	$226,000
Recreation	205,000
Fish and wildlife	13,000
Environmental quality	3,000
Benefit-cost ratio	2.76

Inchelium Area

Total construction cost	$1,366,000
Adjustments	14,000
Total allocation	1,380,000
Program goals:	*Cost allocation*
Irrigation	$680,000
Recreation	148,000
Fish and wildlife	370,000
Migratory waterfowl	5,000
Environmental quality	163,000
Archeology	14,000
Benefit-cost ratio	2.29

Description: The Colville Indian Reservation contains approximately 1.5 million acres and a population of slightly over 5,000. About one-half of the population is Indian. Development of water supplies for irrigation, municipal and industrial use, and enhancement of fish and wildlife resources on the reservation has been limited in the past. Low income levels, unemployment, and other social and economic problems parallel the low level of resource development. Projected water needs of the reservation exceed present reservation uses; about 73,300 acres of scattered lands appear suitable for sprinkler irrigation.

The proposed project investigation would cover water resource development potentials of the entire Colville Indian Reservation, including those potentials identified in the 1979 appraisal report as well as potentials that may later be identified. At any given time, the investigation would concentrate on a few areas and reports and would be completed on these areas as appropriate to provide for an orderly and controlled rate of development. Selection of areas for investigations would be controlled by tribal objectives for development and potential for viable development and operation. Typical areas to be included in the study are discussed below.

North Nespelem Area

The North Nespelem area, located in the center of the reservation along the Nespelem River, has potential for irrigation development, municipal and domestic water supply improvement, recreation development, fist and wildlife enhancement, and environmental quality enhancement. The study would investigate the viability of irrigating about 1,040 acres by pumping ground water. Crops projected would be hay and pasture for a livestock operation.

The appraisal report identified a need for additional municipal and domestic water at Nespelem and the Colville Indian Agency. Since the report was completed, the tribe has implemented some measures to provide additional municipal and industrial water. The proposed study would reexamine the municipal and industrial water situation in view of any recent developments.

The proposed study would also investigate the possibility of pumping ground water into the Nespelem River to maintain minimum streamflows for trout fishery enhancement. Other potentials that would be examined include the establishment of a 1,000-acre greenbelt along the Nespelem River, protection of two wetlands, and construction of a recreation facility.

Owhi Flat Area

The Owhi Flat area is located in the center of the reservation just south of Owhi Lake. Identified potentials include irrigation development, recreation development, and fish and wildlife and environmental quality enhancement. The study would investigate viability of irrigating about 390 acres by pumping ground water. Crops projected would be hay and pasture for a livestock operation. Other potentials that would be examined include a picnic-beach recreation facility, an 80-acre greenbelt on the shore of Owhi Lake, and measures to enhance the lake fishery.

Inchelium Area

The Inchelium area is in the northeastern part of the reservation. Identified potentials include irrigation development, recreation development, and fish and wildlife and environmental quality enhancement. The study would investigate the viability of irrigating about 1,270 acres by pumping ground water. Crops projected would be alfalfa, grains, and pasture for a livestock operation.

Other potentials that would be examined include five greenbelts along streams and lakeshores, fishery enhancement, and recreation development near the tribe's Twin Lakes resort.

Status: The Bureau of Reclamation assisted the Colville tribal council and the Bureau of Indian Affairs (BIA) to develop a water supply for the town of Keller and to reestablish ferry service between the towns of Inchelium and Gifford. An appraisal study of the Colville Indian Reservation was initiated in 1975 and completed in 1978. The planning report discussing the findings of the study and recommending future actions has been completed and distributed to interest publics. Study findings have been reviewed by tribal planners and meetings held with tribal leaders to determine desires regarding future action for resource development.

The proposed study would be coordinated with the tribe; BIA; U.S. Fish and Wildlife Service; Washington State Department of Fish and Game; and other local, state, and Federal agencies.

Justification: Development of water and related land resources on the reservation have been limited in the past. Low income levels, unemployment, and other social and economic problems parallel the low level of resource development. There is a need to develop the water and related land resources to increase employment and revenue and raise the standard of living of the people throughout the reservation. Resource development is needed to enable the Indian people to achieve greater self-determination.

Feasibility study authority should be broad enough to cover the entire reservation since all potentials may not have been covered in the 1979 appraisal report. Tribal interests, priorities, and constraints may have changed since completion of the appraisal report. A wide latitude for study within reservation boundaries is needed to best meet current tribal objectives and to assure that the most needed potentials are investigated.

Project interest: The subcommittees on public works of the Senate and House appropriations committees, in their fiscal year 1974 committee reports, directed the Bureau of Reclamation to study irrigation and other water needs of the Colville Indians.

The Colville Indians have seen water and land resource developments occur all around their reservation and would like to develop their own resources. Tribal members believe that development of natural resources available to them will improve their standard of living and enable them to achieve greater self-determination.

Remarks: Total estimated cost of the feasibility study would be $795,000 over a 3-year study period. Estimated first year cost is $125,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Gibson Dam Powerplant, Sun River Project.

Location: Sun River, Lewis and Clark Counties, Montana.

Description: The proposed project is for a 11-MW, two-unit plant, at Gibson Dam and a 1.6-MW, single-unit plant at the Sun River Diversion Dam.

Gibson Dam is used solely for regulation of Sun River flows for irrigation of the Sun River Project. The Sun River Diversion Dam diverts all irrigation releases from the Gibson Dam into the main irrigation canal project.

The dam is located approximately 6 miles downstream from the confluence of the North and South Forks of the Sun River, about 20 miles northwest of Augusta, Montana, near the east boundary of Lewis and Clark National Forest. Sun River Diversion Dam is about 3 miles downstream of Gibson Dam.

Both powerplants would operate utilizing existing flows. In the case of Gibson Powerplant, releases would only be sufficient to operate for approximately 6 months, while at the diversion dam, sufficient flows are available for year-round operation.

The two plants would have a combined capacity of 12.6 MW and would generate 41,900,000 kilowatt hours. The total investment based on January 1983 costs is $17,700,000.

A 69-kV powerline would be constructed from the Gibson and Diversion Dam powerplants to a substation and a 69-kV powerline in Augusta, Montana, owned by The Montana Power Company. The total length would be approximately 20 miles. Arrangements would be made with The Montana Power Company to wheel the power from Augusta to the Federally-owned Rainbow Substation near Great Falls, Montana.

Status; An appraisal study was completed in August 1981. The results of the study indicated that a feasible project with a 1.08 to 1.00 benefit cost ratio could be built.

Justification: With the increased use of sprinklers on irrigation project land, there is a need for more electric power during the irrigation season. Therefore, the use of irrigation releases from Gibson Dam through proposed powerplants would provide energy to pump water during the irrigation season. Also, conservation of nonrenewable resources, and the clean pollution-free qualities of hydroelectric generation make this proposal very attractive. Although, relatively small, this powerplant would contribute towards future energy supplies.

Project interest: The local electric cooperative would like to see development of a powerplant at Gibson Dam to provide electric power during the irrigation season. Interest in additional power has been continually expressed by customers of Pick-Sloan Missouri power, especially since many will have to look elsewhere to meet their expanding needs which cannot be supplied by Federal power. These customers include cooperatives, public power districts, municipalities, and various State entities.

Remarks: The total estimated cost of the three year study would be $400,000 with $100,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION LC

Project: Imperial Irrigation District Canal Lining and System Improvement.

Location: In Imperial Irrigation District, Imperial County in Southern California.

Project data:

Total construction cost	$127,500,000
Adjustments	.....
Total allocation	127,500,000

	Program goals	Cost allocation
Power		
Flood control		
Fish and wildlife		
Recreation		
Irrigation	(1)	(1)
M&I water	(1)	(1)
Water quality		
Total	[2] 350,000	$127,500,000

[1] Identification of a projected use of the salvaged water will be addressed during the study.
[2] Acre-foot per year.

Description: This study will investigate water conservation on the Imperial Irrigation District (District). Five methods of saving agricultural water to be investigated during this study are; concrete lining of 340 miles of canals and laterals, constructing a 23-mile spill interceptor channel with a terminal reservoir, installing an automated system of about 70 gates on the East Highline Canal to provide downstream control, building a 7,000 acre-foot regulating reservoir to provide storage for excess water orders, and implementing an onfarm water management program which would include flow measuring devices for deliveries, spills and water use. It is estimated that these measures could save about 350,000 acre-feet of water a year.

Status: A special study investigating structural and nonstructural measures to conserve water in the District will be completed in fiscal year 1983. This proposed investigation is an outgrowth of the special study. Preliminary analysis from the appraisal level study shows that by lining 500 miles of presently unlined canals, 168,000 acre-feet of seepage can be prevented, at an average cost of about $70 per acre-foot.

Justification: Water can be saved in the District to either develop new lands or for transfer to other users, with compensation to the District. The District's water rights permit diversion of virtually as much water as it wants to irrigate a fixed amount of land. Water conservation measures could be implemented that would allow continued irrigation of their present acreage with less water. A municipal and industrial water user such as Metropolitan Water District could pay for these measures to obtain the conserved water.

Project interests: The Imperial Irrigation District has been very active in water conservation activities and has supported the ongoing Water Conservation Opportunities special which will be completed in fiscal year 1983. Metropolitan Water District has indicated interest in the study. Other interested agencies include Colorado River Board of California, California Department of Water Resources, Coacella Valley Water District, California Department of Fish and Game, homeowners along the Salton Sea, and the California Waterfowl Association. Imperial Irrigation District, Colorado River Board of California, and Metropolitan Water District will provide in-kind services for investigation costs. The Metropolitan Water District has indicated interest inproviding front-end financing for this project. The Imperial Irrigation district has an ongoing budget of $2 million for canal lining which may be used for up-front money. The California Waterfowl Association has indicated

the possibility of obtaining funds from the Energy and Renewable Resources Fund financed by tideland oil revenues which could be used for developing wildlife habitat.

Remarks: The estimated Federal cost of the 2-stage project investigation over a four year period is $1,000,000. First year funding requirements is $150,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: MP

Project: New Melones Conveyance System Study, Stanislaus Division, Central Valley Project, California.

Location: Portions of Tuolumne, Calaveras, Stanislaus, San Joaquin, and Merced Counties.

Description: New Melones Dam has been completed and is in operation. The area of use for the water supply has been designated, but, in most cases, the physical means to deliver the water to them are lacking. This investigation will be conducted to determine the viability of constructing conveyance and distribution systems to serve the Stanislaus River Basin or other areas from New Melones Reservoir and the Stanislaus River. A plan will be developed to meet agricultural and municipal and industrial water requirements. The plan would provide for some relief from existing conditions of ground water overdraft that continues in the Valley areas.

Status: The pertinent information derived from the "Stanislaus River Basin Alternatives" study such as water requirements and needs, preliminary conveyance systems, and other items related to allocation of New Melones supply, would be utilized in evaluating plans for this study. The project investigation is proposed to be initiated in FY 1984.

Justification: This investigation is needed to formulate plans to utilize the yields of New Melones Reservoir which are: (1) consistent with the needs of the Stanislaus River Basin as defined by the Secretary; (2) compatible with the needs of areas adjacent to the Basin; and (3) compatible with planned uses of water supplies, other than those from New Melones, both inside and adjacent to the Basin. Plans also are needed for the interim use of New Melones water prior to the buildup of full development conditions within the Basin.

Local interest: All affected counties and local water districts support the study.

Remarks: The total estimated cost of this four year investigation is $1,000, with a first-year requirement of $150,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Pilot Butte Powerplant, Riverton Unit.

Location: Pilot Butte Reservoir, Fremont County, Wyoming.

Description: Irrigation water for Riverton Unit is diverted from Wind River into Wyoming Canal and carried to the distribution system. Water is dropped from Wyoming Canal into Pilot Butte Reservoir for regulation and storage. In 1925, the 1.7-MW Pilot Butte Powerplant was constructed on the reservoir to use the drop from Wyoming Canal to the reservoir for power. The powerplant

was shut down in 1973 because operation and maintenance costs exceeded revenues generated by the plant.

Potential exists to replace this installation with a 2.7-MW powerplant. Annual generation would be 9.5 GWH. A new penstock and powerplant would be required The existing switchyard would be modified and the existing transmission line would be used. The total investment based on January 1983 costs would be $4,700,000.

Status: Appraisal-level studies were completed in July 1980 as part of the Wind River Study indicate that the plant would be economically justified. These studies showed that the powerplant would have a 1.1 to 1.0 benefit cost ratio.

Justification: Conservation of nonrenewable resources, and the clean, pollution-free qualities of hydroelectric generation make this proposal very attractive. Although relatively small, this potential powerplant would make a contribution toward energy self-sufficiency.

Project interest: The Midvale District (Riverton Unit) Board of Directors and other area residents have encouraged the study. The Wyoming Municipal Power Agency forecasts an area need for an additional 5-MW capacity in the next 10 years.

Remarks: The total estimated cost of this two year investigation would be $250,000 with $80,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: LM

Project: Prairie Bend Unit, Nebraska, Pick-Sloan Missouri Basin Program.

Location: The project is located in the Platte River Basin area north of the Platte River in Dawson, Buffalo, and Hall Counties in central Nebraska.

Description: The study would develop and assess alternative plans for irrigation, stabilization of ground-water levels, enhancement of water quality, small community and rural domestic water supplies, management of fish and wildlife habitat, public outdoor recreation, flood control, and other purposes determined to be appropriate. The study will determine the amount of water necessary, area of benefit, and the engineering, economic, financial, and environmental viability of alternative plans.

Status: The Bureau proposed to the congressional committees that the preliminary phase of the study be initiated during fiscal year 1983. The proposal was approved. Legislation has been introduced in the House and Senate this session that would provide study authority. There are considerable appraisal level data already available from previous studies. A subappraisal level evaluation of a single-purpose irrigation project utilizing conjunctive use of surface and ground water was made in 1979. The Upper Platte River Study, which will be finalized in calendar year 1983, will provide data on the character of habitat, relationship between water supply and habitat availability, and evaluate the management alternatives, thereby providing valuable information for the Prairie Bend study. Other activities related to this study are the Platte River Water Use Options Study, Nebraska, and the resolution of

issues associated with the Narrows Unit Biological Opinion rendered by the Fish and Wildlife Service on January 20, 1983.

Justification: The Prairie Bend Unit is located in the predominately agricultural area with several rural-oriented towns. The closest large metropolis is Grand Island, Nebraska, a city of over 33,000 population. Private well irrigation development has resulted in declines in ground-water levels causing increased pumping lifts, operating costs, and energy use. Some of the area and towns are experiencing deteriorating ground-water quality and are having to seek other locations for wells for domestic and municipal uses. Pumping may be affecting the wet meadow complexes, which are necessary habitat for the endangered whooping crane and other migratory waterfowl. Also, some of the creeks and drains in the area experience frequent flooding. Development of a multipurpose project would maintain a reliable irrigation economy by means of conjunctive use of ground and surface water, provide flood protection, assist in maintaining desired habitat for migratory birds including the sandhill and whooping cranes and other wildlife, provide for water-based recreation, a sports fishery, save energy, and improve ground-water quality and regulate streamflows.

Project interest: The Central Nebraska Conservation Association, Twin Valley Conservation Association and the Central Platte Natural Resources District are sponsors of the project. The Central Platte Natural Resources District is contributing $25,000 during fiscal year 1983 and will contribute a total of $240,000 during the first phase of the investigation scheduled to be completed in fiscal year 1986.

The trustees of the Platte River Whooping Crane Habitat Maintenance Trust have expressed an interest in cooperating with the Central Platte Natural Resources District toward a study to develop storage in the Platte River Basin for various uses, one of which would be to provide water supplies to assist in maintaining desired habitat for sandhill cranes and the endangered whooping crane.

Remarks: The total estimated cost of the project investigation amounts to $1,050,000 with a first-year requirement of $75,000. The study is estimated to take 4 years to complete.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: PN

Project: Siletz River Basin Project, Oregon.

Location: Mid-Oregon Coast, Lincoln and Polk Counties, Oregon.

Project data: Design and cost estimate for construction of Big Rock Creek dam and reservoir are appraisal level, October 1979 prices. Hydrology data, upon which reservoir sizing is based, are also appraisal level.

Total construction cost	$21,340,000
Adjustments	.....
Total allocation	[1] 21,340,000
Program Goals:	
Municipal and industrial water supply	10,400 acre-feet
Irrigation	3,900 acre-feet
Fish and environmental quality	.....

Recreation	
Benefit-cost ratio	[2] 1.14 to 1.00

[1] Costs are for construction of a dam and reservoir to impound 15,000 acre-feet at the Big Rock Creek site. Costs include all costs of the dam and reservoir, but do not include interest during construction.

[2] Based on an appraisal level evaluation of a core plan to meet municipal and industrial and Siletz River irrigation needs.

Description: An appraisal report on Siletz River basin water conditions, needs, and potentials for project development was completed by the Bureau of Reclamation in 1981. The study indicated that a storage project could make a substantial contribution toward meeting Siletz basin municipal and industrial, irrigation, and anadromous fishery enhancement needs. The emphasis of the proposed study would be on the most favorable storage site evaluated in the appraisal study (Big Rock Creek); however, other water supply alternatives would be reviewed in addition to any new potentials that may be identified.

A 15,000-acre-foot reservoir at the Big Rock Creek site would provide releases from storage to be diverted downstream for municipal and industrial and irrigation use. Downstream diversion facilities already exist but would require enlargement. The diversion facilities are owned and operated by the city of Toledo and the Georgia Pacific Corporation, and these entities and the city of Newport would be responsible for financing and constructing enlarged diversion facilities. Water for irrigation would be pumped from Rock Creek and Siletz River for use on streamside lands by private facilities. Recreation facilities would be provided at the reservoir site. Fish habitat in the stream downstream from the dam could be enhanced by the increased flows. Anadromous fish could also be enhanced by providing increased flows to an existing hatchery.

The Big Rock Creek reservoir site is in an undeveloped area that presently is used for timber production by several companies. The watershed above the dam contains 6.3 square miles of drainage area with an average annual runoff or 35,000 acre-feet. To impound 15,000 acre-feet of storage, a dam 118 feet high and about 550 feet in length would be required. The site is upstream from a natural waterfall, which according to the Oregon Department of Fish and Wildlife is an impassible barrier to anadromous fish migration. Since anadromous fish do not presently use the area which would be flooded by the reservoir, adverse impacts on fish resources would be minimal. However, wildlife habitat contained within the reservoir site would require mitigation measures.

The dam and reservoir site have been mapped, but further geologic studies would be necessary during the project and advance planning study levels. Drilling will be required along the dam axis and at structure site to determine the adequacy of the foundation and to obtain design data. A landslide study program, materials exploration studies, and seismic analysis also be required. The timing of these activities will be coordinated between project investigation and advance planning levels.

The Siletz River is widely know for its steelhead and salmon fishing. Storage development at the Big Rock Creek site would improve the stream even move by augmenting streamflows during the normal low flow season in later summer and early fall. Fish habitat analyses, requiring the gathering of new field data, would be

necessary to upgrade appraisal level fish benefits. In addition, further studies would be required to develop a wildlife compensation plan for the reservoir site.

One alternative plan developed and evaluated at the appraisal level would increase reservoir size from 15,000 to 34,000 acre-feet. The additional storage would be used primarily for instream flow augmentation for anadromous fish. Appraisal level analysis indicated a very significant enhancement for anadromous fish with this plan. Although the total plan is economically marginal, the plan will be reviewed in the proposed study.

The Big Rock Creek reservoir site is in Polk County, essentially at the crest of the Coast Range. The primary water needs are on the coastal side of the mountains in Lincoln County, but Polk County Commissioners requested that the water needs in Polk County be considered also. Water supply capability of the Big Rock Creek reservoir site is limited. An alternative plan formulated at the appraisal level indicated that a transbasin diversion to meet Polk County irrigation and instream flow needs along the Luckiamute River could not be economically justified.

Status: An appraisal study of the Siletz River basin was completed in 1980. The appraisal report was distributed to the public in 1981.

Justification: This project would be primarily a municipal and industrial water supply project which would also meet some needs for irrigation, anadromous fish, and recreation. The study area has a history of water supply problems for municipal and industrial use. Streams which are currently supporting municipal and industrial water diversions are overappropriated and cannot provide additional water during the critical June through October period. Similarly, the overappropriated streams limit expansion for irrigation and fish production.

Present water supplies for the cities of Newport, Toledo, and Siletz will not be adequate to meet projected needs in about 10 years. By 2010, projected needs are expected to exceed present supplies by 10,400 acre-feet per year. The major industrial water users in the study area are wood products and seafood processing plants. Projected water needs for these industries make up about half of the projected deficit.

Alternatives to new storage development as a water supply do not exist, from a practical standpoint. Much of Lincoln County has a poor ground-water potential. The majority of the county is composed of impermeable rock units incapable of yielding large amounts of ground water. Streams and rivers are essentially all appropriated for existing uses during the high water use season. Conservation measures are now being implemented, but the potential water savings will not meet the projected needs. Seawater conversion and weather modification were also evaluated at the appraisal level; neither was found to be practicable.

Irrigation of agricultural lands in Lincoln County is presently limited because water is not available. Lands and climate are suitable for expanding irrigation of specialty crops, but the acreage of such development probably would be limited to 2,000 to 3,000 acres.

Other needs which could be met by a storage project at the Big Rock Creek site include anadromous fish enhancement and slackwater recreation.

Local interest: The cities of Newport, Toledo, and Siletz; the Seal Rock Water District; and water-related industries in central Lincoln County are concerned about the availability of municipal and industrial water supply to meet future needs. They retained a private consulting firm to research the various grant and assistance programs that are available and to recommend an action plan. Lincoln County has prepared a "Comprehensive Water, Sewerage, and Solid Waste Management Plan," to aid in defining needs and setting priorities. Entities in the central portion of the county are actively pursuing a solution to their water management problems with the nucleus of effort centered with the cities of Newport, Toledo, and Siletz; Seal Rock Water District; and some local industries. In addition, a need has been expressed by fishery agencies to provide storage for flow augmentation in the Siletz River for anadromous fish enhancement.

Remarks: Total estimated cost of the 2¾-year feasibility study would be $470,000 with first year funding of $140,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATION, REGION: LC

Project: Spring Canyon Pumped-Storage Project.

Location: The Spring Canyon Pumped-Storage site is located within the Lake Mead National Recreation Area in Mohave County, Arizona about 8 air miles east of Temple Bar, Arizona and 40 miles east of Boulder City, Nevada.

Project data: Designs and cost estimates for the pumped-storage project are appraisal level. They are based on data from private utilities, Western Area Power Administration, the Federal Register, and other Federal documents.

Total Construction cost	$1,415,000,000
First stage	803,600,000
Total alloaction	1,415,000,000
Program goals:	*Cost allocation*
4,000 MW (multistage–1,000-MW increments)	$1,415,000,000
B/C ratio	[1] 1.7:1

[1] At 13 percent plant factor for both 1,000 staged and 4,000 MW ultimate capacity.

Description: The objective of this investigation is to determine the viability of the potential development of the pumped-storage facility in producing new generating capactity to meet anticipated peaking power requirements in the Pacific Southwest marketing area. The preferred plan provides for an ultimate capability to produce 4,000 MW of peaking power. Since this would exceed initial market demands, and project could be constructed in stages. Initially, the dam, dikes, underground powerhouse and penstock tailrace tunnel complex would be constructed to ultimate size. The pump generators, switchyard, and transmission lines should be constructed in 1,000 MW increments. The 1,000 MW produced at Spring Canyon would supply a significant portion of the estimated 1,500 MW of peaking capacity that would be required in the Pacific

Southwest Marketing area by the year 2000. Present studies indicate a 10-year interval for additional 1,000 MW stages. If an unforeseen technological breakthrough should occur that would eliminate the need for additional hydro peaking capacity after the first stage was constructed, the single stage benefit-cost ratio would drop to 1.3 as a result of oversizing some of the features. The reservoir would have a maximum capacity of 218,000 acre-feet with an annual net project evaporation rate of 3,700 acre-feet. The rate operating head would be 740 feet. Approximately 50 percent of the transmission line right-of-way is on Federal land. The transmission lines would be along existing transmission line corridors.

Status: A special study was completed during fiscal year 1981 with the final report dated May 1982. This investigation indicated the protential Spring Canyon Pumped-Storage Project is engineeringly feasible and economically justified with a benefit-cost ratio or 1.7:1 for both both the first 1,000 MW staged construction and 4,000 MW multistage. The project would provide needed peaking power by a renewable resource without the use of gas or oil-fired turbines.

Justification: The production of 1,000 MW with a potential of 4,000 MW of new generating capacity at Spring Canyon would supply a significant portion of the estimated 1,500 MW of peaking capacity that would be required in the Pacific Southwest marketing area by the year 2000. The Spring Canyon Pumped-Storage Project has both the flexibility and capability of supplying a significant portion of these requirements after the year 2000 with pump-generator units being installed as needed. The four-stage project has a favorable benefit-cost ratio of 1.7:1 with a net annual benefit of $182,000,000. If, for any reason, the project were terminated after the first stage, the net annual benefit would still be $135,000,000 with a 1.3:1 B/C ratio. Low value offpeak energy from baseload coal, nuclear or other federal powerplants could be purchased to pump the water from Lake Mead to the Spring Canyon Reservoir. This water would then be released through turbines to generate power during peak-load periods replacing gas or oil-fired combustion turbines which would otherwise be utilized to supply this peaking power. Operating at a 13 percent plant factor, each 1,000 MW of installed capacity would conserve about 1.9 million barrels of oil per year on a regionwide scale. The Spring Canyon Reservoir could also be used as a forebay reservoir for the Kingman water supply project.

Project interest: Environmental studies have indicated no significant adverse environmental impacts. The response of the public during public meetings was favorable with no adverse reactions being expressed.

Remarks: This three year investigation would cost $1,300,000 with a need for $412,000 for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Tongue River Dam, Montana.

Location: Tongue River in southeastern Montana in Big Horn and Rosebud Counties, near the border with Wyoming.

Description: Tongue River Dam and Reservoir, a State project, provides irrigation water, M&I water, flood control, and recreation. Capacity is 68,000 acre-feet with a firm annual yield of 40,000 acre-feet. About 7,500 acre-feet are used on the Northern Cheyenne Indian Reservation.

The Tongue River Dam has been identified as an unsafe dam. During high runoff in 1978, the spillway was severely damaged.

Status: The State has funded several studies to find ways to correct the unsafe condition and, if possible, provide additional storage. Alternatives have been developed that range from breaching or rebuilding the dam to building a larger dam possibly with a power generating plant. Several potential damsites have been located. In the plan formulation process, information would be developed for use in selecting the most desirable alternative. Geologic investigations, design and estimates, economic analysis and environmental impact studies would be completed for these dam sites. The Tongue River Dam and Reservoir, at present a State-operated would become a joint State-Federal project if modified under this program. It is expected that industrial water users will pay for the major portion of the reformulated project.

Justification: The project would improve an unsafe dam and would maintain an established irrigated agriculture economy with an estimated value of $3,400,000. A firm annual industrial water supply of 30,000 acre-feet that would be shared by the State of Montana and the Northern Cheyenne Indian Tribe would be developed. Based on January 1980 costs, the industrial water would have a value of $250 per acre-feet and would be located in a water-short area rich in coal resources.

Project interest: Interest in this study has been expressed by the Montana Department of Natural Resources and Conservation; the Bureau of Indian Affairs; the Northern Cheyenne Indian Tribe; the Northern Plains Resource Council; the Montana Department of Fish, Wildlife and Parks; the U.S. Fish and Wildlife Service; and local irrigation districts.

Remarks: The State of Montana, Bureau of Reclamation, Northern Cheyenne Indian Tribe and Bureau of Indian Affairs would share all funding required for this study. The planning report would be used as a basis for Federal and State funding for construction of the project. A cost sharing agreement would be a result of the completed study. The total estimated cost of the three year study would be $275,000 with $25,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION:

Project: Water Conservation and Efficient Use Program, All-American Canal Relocation Project.

Location: The All-American Canal Relocation area is located west of Yuma, Arizona beginning south of Pilot Knob and extending west to Drop No. 4, in Imperial County, California.

Project data:

Total construction cost	[1] $133,000,000
Adjustments	
Total allocation	133,000,000

	Program goals	Cost allocation
Power		
Flood control		
Fish and wildlife		
Recreation		
Irrigation	(2)	(2)
M&I Water	(2)	(2)
Water quality	(2)	(2)
Total	[3]70,000	$133,000,000

[1] Reject Stream Replacement Special Report, Title I, CRSCP, June 1980, cost indexed to October 1983.
[2] Identification of a projected use of the salvaged water will be an item that will be addressed during the study. Costs associated with use by the Federal Government for water quality purposes would be nonreimbursable, while irrigation or M&I use would require cost allocations for those purposes.
[3] Acre-feet.

Description: the All-American Canal was constructed in the 1940's to convey water from the Colorado River to the Imperial and Coachella Valleys in California. Since the canal is unlined, a significant quantity of water is lost through seepage. Lining the canal would provide opportunity to make beneficial use of the seepage water which now either contributes to the high ground-water problem in the Imperial Valley or provides ground-water aquifers in Mexico with a constant replenishment supply. Since the Imperial Irrigation District and Coachella Valley Water District irrigate year round, the All-American Canal cannot be shut down for any length of time. The recommended plan for conserving the seepage water is to build a new concrete-lined canal next to the present alinement. About 30 miles of the canal would be relocated between Pilot Knob and Drop No. 4. Tie-in to the existing canal at drop structures and highway crossings would permit the use of these facilities in the new canal and would permit staged construction.

Status: This 2-year investigation is a new initiative proposed to begin in fiscal year 1984. The "Reject Stream Replacement Study, Special Report," presented a plan for relocating and lining the All-American Canal in an effort to conserve seepage losses that could be used to replace the Yuma Desalting Plant reject stream. That report indicated an estimated conserved water cost of about $110 per acre-foot and acceptance by affected entities. Environmental impacts and mitigation possibilities must be studied further. Instituional implications of necessary changes in water exchanges agreements, existing contracts, and compacts, would need to be addressed.

Justification: Provisional records from the Imperial Irrigation District show a potential saving of about 70,000 acre-feet of water per year by lining the All-Amiercan Canal between Pilot Knob and Drop No. 4. As full development of Colorado River water occurs, shortages are anticipated and conserving seepage losses is one of the less costly sources of additional water supplies.

Project interests: The Colorado River Board of California has indicated support for this project with the condition that the Federal Government would not obtain permanent rights to the salvaged water. The Imperial Irrigation District and Coachella Valley Water District have indicated interest in further studies. Concern has been expressed by the Fish and Wildlife Service that construction

activities within the sand dunes may adversely impact sensitive plants and wildlife.

Remarks: The total estimated costs of a 2-stage project investigation over a two year period is $550,000. The first year funding requirement is $135,000.

BACKGROUND STATEMENT,[1] GENERAL INVESTIGATIONS, FEASIBILITY INVESTIGATIONS, REGION: MP.

Project: Klamath Project, Upper Klamath Offsteam Storage Study.

Location: The Round/Long and Aspen Dames and Reservoir sites are located in Klamath County, Oregon.

Description: Long, Round, and Aspen Lakes, either singly or jointly, would be the logical Upper Klamath Basin development for meeting this offstream storage need. The offstream site(s), located west of and 300 feet above Upper Klamath Lake, would be filled by pumping surplus spring runoff entering Upper Klamath Lake. The stored water would then be available for various uses during dry years, for seasonal power generation and other seasonal uses and for daily peaking power. Flexibility in maintaining Upper Klamath Lake elevation would be enhanced.

Status: A reconnaissance report on the Upper Klamath Basin was completed in September 1971. The potential pump storage plan was evaluated on a sub-appraisal basis as part of the Butte Valley Division study published as a concluding report in fiscal year 1981. An appraisal study was initiated in fiscal year 1982 and is scheduled for completion in fiscal year 1983. The Bureau of Reclamation is jointly developing a work schedule and plan of study for this appraisal study with Pacific Power and Light Company. A formal contract agreement will be signed as soon as possible.

Justification: The need for power generation in the Pacific Northwest is anticipated to change by the 1990's requiring more seasonal peaking. Hydropower is a logical source for meeting this demand. Additional conservation storage in the vicinity of Upper Klamath Lake, by providing an improved seasonal yield in normal years and carryover storage in dry years, would enhance downstream power generation capabilities at existing and planned future Klamath River facilities.

Recent dry years have heightened concerns of irrigators about the adequacy of Upper Klamath Lake as a water suply. Additional conservation storage is sought to assure a firm supply for existing and possible expanded irrigated agriculture.

Upper Klamath Lake, with over 90,000 surface areas, when full, is under-utilized for most of the recreation season because of poor quality, resulting from abundant algae blooms. Operational changes which would allow the lake to be maintained at a higher summer elevation are anticipated to have a beneficial impact on this problem. Higher water levels during late summer and fall

[1] COMMITTEE NOTE.—This background statement was submitted by the Department in May, 1982, as part of the Department's views on S. 2443. S. 2443, a bill to authorize certain feasibility studies, was considered but not passed during the 97th Congress. The Department did not submit a background statement on the Upper Klamath Offstream Storage Study as part of its views on S. 622.

would also be favorable for waterfowl. The adjacent Upper Klamath National Wildlife Refuge has experienced outbreaks of avian botulism, a major waterfowl disease, during periods of low water levels.

In recent dry years deficiencies have occurred in downstream fish flows important for the anadromous fishery. These downstream flows are directly dependent on available Upper Klamath Lake water supply in late summer and early fall.

Project Interest: There is high local and State of Oregon support for the study and there is the potential for up-front cost sharing for both investigation and construction costs by the Pacific Power and Light Company.

Investigation costs: Funds in the amount of $1,125,000 would be required to conduct this 3-year investigation with $300,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Blue Holes Reservoir, Wyoming.

Location: Wind River approximately 1.5 miles downstream from the confluence of Dinwoody Creek and the Wind River in Fremont County and the Wind River Indian Reservation, Wyoming.

Description: Blue Holes is a potential storage reservoir with a capacity of 357,000 acre-feet and a firm yield of 174,000 acre-feet. The proposed reservoir would be a multipurpose project with benefits for new and supplemental irrigation, hydropower, municipal and industrial water, recreation, and fish and wildlife.

The dam would be an earthfill structure with a concrete spillway and radial gates for regulating releases. Physical dimensions of the structure would be 265 feet high and 5,800 feet in length for approximately 27,000 cubic yards of material. Capacity of the spillway would be 75,000 ft^3/s..

The total investment cost based on January 1983 costs is $184,000,000.

The reservoir is located within the boundaries of Wind River Reservation.

The Shoshone and Arapahoe Indian Tribes are located on the reservation.

Status: In September 1981, an appraisal-level study titled Wind River Rasin Water Supply Study was completed. Blue Holes was an alternative that the State of Wyoming and the local residents are supporting for development. The study is proposed for initation in fiscal year 1984.

Justification: Using January 1983 costs, the annual cost of water for the Blue Holes Reservoir would be $76 per acre-foot. Municipal, industrial, and irrigation water users have identified a need for a new water supply of 190,000 acre-feet. Compounding this need is the concern by the Wind River Reservation Indian Tribes to maintain their reserved water and to maintain their fishery in the Wind River. Blue Holes Reservoir would provide for the needs and concerns of all interested parties in the Wind River Basin.

Project interest: The Wind River Development Committee was formed by supporters of water resource development in the Wind

River Basin. This group favors the development of the Blue Holes Dam and Reservoir.

Remarks: The total estimated cost of the three year study would be $670,000 with a first year cost of $100,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Muddy Creek Basin hydrologic, surge relief and erosion control study.

Location: Cascade County, near Great Falls Montana.

Description: The purpose of this study would be to determine the feasibility of contructing a reservoir on Muddy Creek to reduce erosion. The 42-mile long creek has an 314-square mile drainage area, including irrigation return flows from the Greenfields Division of the Sun River Project. It is estimated that an average of 213,000 tons of sediment per year is carried down Muddy Creek and eventually into the Sun River. Much of the sediment load is picked up during high flows from spring runoff or other storms and during the irrigation season these high flows are further increased by irrigation flows or canal wasting.

A rehabilitation and betterment (R&B) of the Greenfields irrigation facilities consisting of lining canals and laterals or replacing them with pipe to reduce waste has begun. In addition the Soil Conservation Service has sponsored a program to reduce waste and increase efficiency. It is estimated that when these two programs are fully implemented, the annual sediment load will reduce to about 147,800 tons a year.

However, there is still a need to reduce high flows in Muddy Creek. When a heavy rain occurs during the irrigation season, farmers cancel their water orders and stop irrigating; the canal gets shut of at Pishkun Reservoir, but water already in the canal system downstream from Pishkun must be disposed of, and most of it is wasted into Muddy Creek. Storms which result in wasting canal water into Muddy Creek occur on the average about once a year.

Status: A special study was done by the Bureau of Reclamation in FY 1982 on the Muddy Creek erosion problem and several alternatives were examined. The plans were formulated and evaluated on the assumption that the R&B program and the onfarm conservation program previously discussed will be completed and will reduce Muddy Creek flow as predicted. The alternative selected as the most feasible was a dam and reservoir on Muddy Creek near the town of Power. This plan would reduce average sediment load in the creek about 61,000 tons per year and could also make more water available for the Benton Lake National Life Refuge.

Justification: The landowners along Muddy Creek are concerned about loss of land resulting from the erosion and meandering of the Creek. People in Great Falls are concerned about the silt being carried into the Sun and Missouri Rivers. Even with the programs discussed, significant erosion will still occur several times each year during high-flow periods. Therefore, a need exists to further reduce high flows in Muddy Creek.

Local Interest: The previous special study conducted by the Bureau was requested by the State of Montana and residents of the area, and was funded by the State through the Cascade County Soil Conservation District. These same interest support this proposed investigation.

Remarks: The total estimated cost of this two year study is $200,000 with $100,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: MP

Peoject: San Joaquin Valley Ground Water Surface Water Intergration Study, San Joaquin Valley Division, Central Valley Project.

Location: The study area includes parts of San Joaquin, Stanislaus, Merced, Medera, Fresno, Tulare, Kings, and Kern Countries in California.

Discription: The purpose of the study is to determine the need for additional import water supplies to provide relief from existing conditions of ground water overdraft and to meet anticipated future agricultural and municipal and industrial water requirements; an estimate of the capability of existing underground and surface firm water supplies to meet these requirements; and an estimate of the amount of supplemental water supplies needed to fully satisfy these requirements. An assessment will be made of the impacts of ground water overdrafts such as increased pumping costs, water quality deterioration, and land subsidence. This assessment will include the evaluation of other water and related problems in the area such as drainage, erosion and sedimentation, flooding, and fish and wildlife deterioration. Plans will be developed to utilize existing CVP water supplies and existing facilities to deliver them to the extent possible.

Status: A series of discussions have been held during the last several months with representatives of a number of local water agencies in the San Joaquin Valley who have expressed an increasing concern about serious ground water overdrafts, subsidence, and deteriorating quality of ground water. These discussions have led to the concept of the San Joaquin Valley Ground Water/Surface Water Integration Study. No *studies* have been initiated specifically under this study to date; however, there is extensive information that will be useful in this study-information which was developed under the East Side Division, on which feasibility reports were prepared in 1968, and other previous investigations.

Justification: The major need of the study area is for a supplemental water supply of roughly 2 to 2½ million acre-feet to replace supplies presently obtained from ground water overdraft. Corollary problems associated with the overdrafts are increasing ground water pumping costs, water quality deterioration, and land subsidence. Other water and related problems in the study area are drainage, erosion and sedimentation, flooding, and fish and wildlife deterioration.

Local interest: the Mid-Valley Water Authority, comprised of some 30 entities (counties, cities, water districts, irrigation districts, and water conservation districts) has just been formed and it has

indicated that it not only has a great interest in and supports the study but is willing to make funds available for the effort.

Remark: Total estimated cost of this 2-year investigation is $600,000 with a first-year requirement of $300,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS

Project: Delta Channel Construction Investigation; Delta Division, Central Valley Project.

Location: Sacramento-San Joaquin Delta area, located in Sacramento and San Joaquin Counties about 70 miles northeast of San Francisco.

Description: This study will formulate and analyze a plan which would deliver the needed additional quantities of Sacramento River water to the export pumps while maintaining the beneficial Delta water uses and Delta environment. The Bureau of Reclamation has, for the last 30 years, recognized the need to augment the natural cross-Delta conveyance capacity. In 1951, the Delta Cross Channel, designed to accommodate cross/Delta flow requirements of the CVP Delta-Mendota Canal, was completed by the Bureau. However, with the construction of the State Water Project, the need for additional cross-Delta conveyance capacity increased.

Status: In the mid-1960's, the Bureau of Reclamation began to study the feasibility of constructing the Peripheral Canal jointly with the State of California. The draft report on the project was approved and adopted by the Assistant Secretary of the Interior on July 3, 1969, and submitted to the State of California, the Secretary of the Army, and other interested Federal agencies for review and comments. The feasibility report and the related Environmental Impact Statement were not completed because the State decided to reconsider its support for the Canal and the Water Resources Council promulgated the new principles and standards for planning water and related land resources requiring reformulation of the draft 1969 feasibility report. Additionally, in 1978 the California State Water Resources Control Board issued Decision 1485 setting water quality standards in the Sacramento-San Joaquin Delta and the Secretary of the Interior decided to have the Central Valley Project voluntarily meet those Delta water quality standards in normal water years. In 1981 the California legislature enacted SB 200, which authorized the Peripheral Canal and other water facilities, which were signed into law. However, the Peripheral Canal proposal was defeated on the June 1982 ballot. At the present time the California water community is considering alternatives to the Peripheral Canal. The Bureau will participate in these deliberations. When a promising proposal is put forth, the Bureau will participate in the technical and economic analyses of it under this investigation.

Justification: Indications are that additional developed water supplies will be needed to meet the needs of the State of California. Recent projections by the Department of Water Resources show that statewide net water use is expected to increase to 37.3 million acre-feet by 2010. Additionally, the 1976–77 drought clearly demonstrated the need for additional surface water development to re-

verse current ground water overdraft in the San Joaquin Valley and elsewhere; to meet commitments of the Central Valley Project, proposed instream water uses in the Sacramento-San Joaquin Delta and elsewhere; and for future growth requirements.

Local interest: It is anticipated that the State Department of Water Resources will cost-share construction costs in proportion to its share of the benefits. Investigation study costs probably will be shared equally between the Bureau and the State. Participation by local interests also is possible.

Remarks: Total estimated cost of the four year investigation would be $1,575,000, with a first-year requirement of $250,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: LC

Project: Deep-Carbonate Aquifer Project.

Location: In portions of Clark, Lincoln, and Nye Counties in southern Nevada.

Project data:

Total construction cost	$380,000,000
Adjustments	
Total allocation	$380,000,000

	Program goals	Cost allocation
Power		
Flood control		
Fish and wildlife		
Recreation		
Irrigation		
M&I Water	25,000	$380,000,000
Water quality		
Total	[1] 25,000	$380,000,000

[1] Acre-feet

Description: The existing water supply in the Las Vegas Valley is large enough to satisfy peak daily demands only through the year 2005. The deep-carbonate aquifer underlying the Las Vegas Valley has the potential for providing both peaking capacity and a new water supply. If the results of the 2-year special study are favorable to the development of the water supply, and this proposed study is authorized and funded, an exploration and test drilling program would be implemented. The results of the exploration and drilling program would be evaluated to determine the viability of developing these aquifers to supply additional peaking capacity needed in the near future (year 2005) and of providing additional water supplies needed beyond the year 2030. Other potential developments of significance would also be identified.

Status: This is a proposed new initiative and will be based on the outcome of a special study currently underway.

Justification: The available municipal and industrial (M&I) water supply will meet projected needs for southern Nevada through the year 2030, but even after implementation of water conservation and wastewater reuse programs and full utilization of available local storage there is insufficient capacity to meet peak-day de-

mands beyond the year 2005. After implementing water conservation and wastewater reuse programs, there will be a 150 cfs deficiency in peaking capacity. Developing the Deep-Carbonate Aquifer for expanding the capacity of the Southern Nevada Water System appears to be the most viable means of providing the additional peaking capacity. Development of the carbonate aquifer appears to be the most cost effective means of developing additional peaking capacity with an estimated cost of $380,000,000 as compared to $510,000,000 to enlarge the Southern Nevada Water System. Local water users must utilize the most cost effective means to meet the M&I water needs of a growing economy in a carbonate aquifer as the top priority in meeting future water needs. Local water rates are in the mid-range of rates for comparable municipalities in the west. In addition to cost, the carbonate aquifer is more attractive to local water users because development costs can be delayed until capacity is needed by drilling wells as demands require thus developing new water in addition to Colorado River water. Available information indicates that the carbonate aquifer has the required potential but many uncertainties still exist. A detailed study is needed to determine how much can be developed and where it is most plentiful.

Project interests: Local agencies have indicated a willingness to participate financially. They have currently spent over $130,000 on data gathering and support activities. No exact amount of future participation has been specified.

Investigation costs: The total estimated costs of this 2-stage project.

Remarks: The total estimated costs of this 2-stage project investigation over a five year period is $2,500,000. First year funding requirement is $300,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: LC

Project: Arizona Upper Gila Study.

Location: In Greenlee and Graham Counties, Arizona.

Project data:

Total construction cost	[1] $192,000,000
Adjustments	
Total allocation	$192,000,000

[1] Allocation of costs will be determined during the study.

	Program goals	Cost allocation
Power		
Flood control		
Fish and wildlife		
Recreation		
Irrigation	12,700	([1])
M&I water	50,000	([1])
Water quality		
Total	[2] 62,700	$192,000,000

[1] Allocation of costs will be determined during the study.
[2] Acre-feet.

Description: This 2-year study will investigate the feasibility of annually providing Central Arizona Project (CAP) water supplies of 12,700 acre-feet to the San Carlos-Apache Indian Reservation and 50,000 acre-feet to mining industries in the Safford and Morenci, Arizona areas through an exchange with downstream Gila River water rights holder. Other study objectives include reducing flood damages, producing hydropower, recreation development, and environmental enhancement.

Status: The Bureau of Reclamation (Bureau is currently conducting the Upper Gila Water Supply Study (UGWSS)) which is part of the advance planning activities for CAP. The UGWSS study objective is to evaluate alternatives to Hooker Dam and Reservoir or suitable alternatives, a feature of CAP authorized by the 1968 Colorado River Basin Project Act. The Act provides that the Secretary shall offer to contract with New Mexico water users for an average annual consumptive use of 18,000 acre-feet of water from the Gila River Basin. The Act also provided that this depletion be accomlished without causing economic injury or cost to the holders of downstream water rights. To implement these provisions, the Act authorized the construction of Hooker Dam or suitable alternative and provided for an exchange of CAP water to satisfy downstrem water rights.

The current UGWSS alternative include the Conner damsite on the Gila River and offstream storage and ground-water pumping features in New Mexico for providing the New Mexico supply. In addition, the UGWSS has tentatively addressed alternatives that would also provide CAP water to users in eastern Arizona. An enlarged Conner Dam and/or a dam at the Quail Springs site of the San Francisco River could be used to bring CAP water, through exchange, to Indian and non-Indian water users who have received CAP allocations. However, these features are not an authorized part of the CAP. As a result, study authority is required to develop a planning report, environmental impact statement to seek construction authorization for those features not authorized by Public Law 90–537.

Justification: The San Carlos-Apache Indian Reservation and the mining industries in the Safford and Morenci areas have received CAP water allocations, but contruction authorization for the features to provide these allocations is not included in Public Law 90–537 which authorized CAP. This project investigation will determine the most effective alternative and seek construction authorization for the features.

Project interest: The study has the support of the Arizona Department of Water Resources and the Upper Gila River Association.

Phelps Dodge Corporation will be providing data on the potential expansion of their Black River intrabasin diversion facility as an alternative to using Gila River exchange. The Corps of Engineers will also be providing data under their Camelsback Dam study and assisting in formulating flood control alternatives.

Investigation costs: The total estimated costs of a 2-stage project investigation is $400,000. First year funding requirements are $250,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION; UC

Project: San Juan River Unit, Colorado River Water Quality Improvement Program, Arizona, Colorado, New Mexico, Utah.

Location: San Juan River upstream from Bluff, Utah.

Project data: Costs cannot be estimated at this time. Alternatives would be evaluated on the basis of cost-effectiveness for salinity reduction, rather than by benefit to cost comparison.

Description: The study would investigate sources of salinity from the San Juan River's headwaters in south-central Colorado to its mouth at Lake Powell, and recommend alternatives which prevent salt from entering the river. Possible alternatives could include lining canals; pumping saline reservoirs under the river to lower the fresh water-saline water interface; intercepting saline springs, or collecting saline water and using it for industrial purposes. The alternative of no action would also be evaluated. Preliminary reconnaissance of the San Juan River between Shiprock, New Mexico, and Four Corners indicates significant salt contributions. Data for water years 1978, 1979, and 1980 shows an average annual flow of 2,047,000 acre-feet at Bluff, Utah, carrying a salt load of 1,165,000 tons. One-half of the salt load, 590,000 tons, enters the river between Farmington, New Mexico, and Bluff, Utah, but the flow only increases by 15 percent, 271,000 acre-feet. Of this, 204,000 tons anually enters the 27-mile reach between Shiprock, New Mexico, and Four Corners, while the difference in flow is only 139,000 acre-feet annually. The Mancos River, which has its confluence in this reach, contributes approximately 50 percent of the flow, 68,200 acre-feet annually, but adds 56,800 tons, or only one-fourth of the total salt load.

Status: Salinity investigations were authorized under Public Law 93-320, June 1974.

Justification: The Colorado River's salinity progressively increases downstream due to the addition of salt to the river from such sources as erosion of saline geologic formations, irrigation return flows, and saline springs and seeps. Salt concentrations results from consumptive use of water such as irrigation, municipal and industrial use, transpiration from native vegetation, and evaporation. The goal of the Colorado River Water Quality Improvement Program is to maintain Lower Colorado River salinity concentration levels at or below 1972 levels while the Basin States continue to develop compact-apportioned water. To attain this goal, an estimated 2.8 million tons of salt per year must be intercepted before entering the river system by the year 2000. The San Juan investigation could further the achievement of these objectives. Local benefits to the study area could include water conservation, improved irrigation systems, and improved water quality.

Local interest: The Navajo Nation and the San Juan County Commissioners have written letters supporting a salinity study on the San Juan River. The State of New Mexico has also indicated support for the study. The Colorado River Basin Salinity Control Forum. which represents the seven Colorado River Basin States, has also expressed support.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UC

Project: Mesa-Delta M&I Ground Water Study, Colorado.

Location: Mesa & Delta Counties in Western Colorado in the vicinity of Grand Junction, Colorado.

Project Data: Costs and benefits have not been determined.

Description: This investigation would study the potential for developing the ground water resources particularly on Grand Mesa but also on the Uncompahgre Uplift and any other potential ground water basin. The purpose would be to provide M&I water to the Grand Valley area—specifically to the towns of Palisade, Clifton, Grand Junction, and Fruita. Total projected water shortages in the year 2020 for these municipalities is estimated to be 21,200 acre-feet. This investigation will not only look at supplying the needed water but in addition will look at the opportunity to generate electricity as the water is conveyed from elevation 10,000 feet on Grand Mesa to the Grand Valley area more than 5,000 feet below. The study will focus on field investigations including drilling and aquifer testing to define the geologic and hydrologic characteristics of the ground-water system as well as determining the storage, yield, and recharge to the system. Determinations of the tributary versus nontributary nature of the system will be made, and the impacts on existing water rights and uses will be evaluated.

Status: Since 1972 the Bureau has been investigating the possibility of building a dam and reservoir near the town of Grand Junction on the Gunnison River to supply water for M&I needs to the Grand Valley area. Recent studies show that the proposed Dominguez Reservoir could provide the annual projected shortages of 9,300, 15,500, and 21,200 acre-feet for the year 2000, 2010, and 2020 respectively to the towns of Palisade, Clifton, Grand Junction, and Fruita. An alternative to the Dominguez Reservoir Project is to provide the same needs from ground water sources.

Justification: Very preliminary investigations by the USGS show that nearby Grand Mesa contains a large volume of ground water in storage within the basalt flows that cap the flat-topped mountain. It is not known exactly how much ground water is contained in the fractured basalt, but preliminary estimates indicate as much as 500,000 to 700,000 acre-feet. Furthermore, the flat surface of the Mesa accompanied by the high alpine precipitation allows for significant recharge to take place. Development of this ground water becomes more attractive because it is possible to generate electricity as the water is delivered from the 10,000 foot elevation of the mountain to the less than 5,000 foot elevation of the valley floor below. It is conceivable that the pumping costs to remove the water from the ground may be more than offset by the potential power generation capabilities. Other advantages to a ground-water supply include: a high quality water with little pretreatment required; a relatively constant water supply even during periods of drought; little if any additional salinity increase in the Colorado River; development of a water supply with significantly less cost than that of a dam and reservoir; significantly less land being utilized with accompanied less environmental impacts.

Local interests: M&I Water Users, such as the city of Grand Junction, the towns of Fruita and Palisade, Clifton Water District, and the Ute Water Conservancy District, support this investigation.

Remarks: This four year study is estimated to cost $1,250,000. First year funding requirements are $300,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: SOUTHWEST

Project: Southeast Oklahoma Water Supply and Distribution Study, Oklahoma.

Location: The study area is within Sub-State Planning Districts 3 and 4, including the lower Red River drainage basin counties of Choctaw, McCurtain, Pushmataha, Garvin, Pontotoc, Coal, Murray, Johnston, Atoka, Marshall, Bryan, Love, and Carter.

Description: This investigation will address the requirements for developing plans for water supply, treatment, and distribution systems to meet the study area needs. The study will provide for review of municipal and industrial water demands projected by the State of Oklahoma and preparation of designs and cost estimates for conveyance systems to deliver the water from existing reservoirs in the area to local water distribution entities as well as the evaluation of need for other reservoirs. Cultural and environmental impacts would be assessed.

Status: In fiscal year 1982, the Red-Ark Development office was established to coordinate and guide an orderly review of all resources in a 24-country area and to conduct a comprehensive assessment of their development potential. The Oklahoma Water Resources Board (OWRB), by letter of March 2, 1982, requested the Bureau of Reclamation to participate with other Federal and State agencies in that assessment. In that letter, the OWRB also requested the Bureau to prepare preliminary design and cost estimates to evaluate water treatment and conveyance facilities for communities and rural water districts identified as potential users of water from McGee Creek Reservoir (now under construction by the Bureau). The Bureau complied with those requests in fiscal year 1982. Subsequently, the OWRB stated its support for the Bureau to initiate an investigation to develop plans for water supply, treatment, and distribution systems to meet the needs in this 13-county area in southeast Oklahoma.

Justification: The southeast area of Oklahoma has lagged behind the rest of the State in economic development. Although resources are abundant, they are underdeveloped. Several local entities have been organized to plan for orderly development and to promote economic growth in the area. The Bureau's investigation will complement and facilitate these activities and provide a means whereby these entities could implement vital components of their efforts. It has been recognized that the development of local water treatment and distribution systems in the study area could help promote the timely and efficient use of water from the Bureau's McGee Creek Reservoir and other reservoirs in the study area.

Project interest: This study is supported by the two Sub-State Planning Districts, Red-Ark Development, the Oklahoma Water

Resources Board, Governor Nigh, and Congressman Wes Watkins. The OWRB has stated its intention to participate in the study through in-kind contributions by assuming a portion of the work involved in the planning process.

Remarks: Total estimated cost of a 3½-year project investigation: $725,000; first year requirement: $250,000.

BACKGROUND STATEMENT, PROJECT INVESTIGATION, REGION: SOUTHWEST

Project: Northwest Oklahoma Water Supply Project, Oklahoma.

Location: The northwest Oklahoma area includes the Counties of Cimarron, Texas, Beaver, Harper, Woods, Ellis, Woodward, and Dewey. Depending on the need and potential sources of water supplies, the study area may also include some areas in adjacent counties.

Description: The investigation will determine the short-term and long-term municipal and industrial (M&I) and multipurpose water supply needs of the area, analyze the capability of existing or potential sources of water to meet those needs, and formulate alternative plans to develop and convey the available water resources. All potential sources of water will be considered, including ground water, surface water from existing or potential sources, both within and outside the study area, and available water supplies of poor quality that might be made usable by special treatment or demineralization.

Status: The Oklahoma Comprehensive Water Plan, completed in April 1980, presented a flexible guide for development of the State's water resources on a regional basis and recognized that several counties in northwestern Oklahoma are expected to experience water deficits.

Justification: The northwestern counties of Oklahoma comprise one of the most water-deficient areas of the State. Declining ground water supply, which is virtually the only currently reliable source of water, poses a critical problem. Recharge from the 18 inches of average annual precipitation cannot equal the present rate of withdrawal pumping. Declining water levels also threaten encroachment of fresh water aquifers by saline water. Of the four major streams traversing or adjacent to the area, the North Canadian River is now fully appropriated, and the Cimarron and Salt Fork Rivers are generally considered too saline for M&I or irrigation uses. The Canadian River on the south has unappropriated water, but the quality does not meet public health standards for municipal and domestic uses. Smaller streams are often saline and subject to wide variations in annual runoff. Both surface and ground water supplies are adversely affected by periodic droughts. Numerous small communities (with populations of 10,000 or less) have, or are projected to have in the near future, needs for additional M&I water supplies.

Project interest: This study is supported by Congressman Glenn English, Governor Nigh, the Oklahoma Economic Development Association, and the Oklahoma Water Resources Board (OWRB). The OWRB has stated its intention to participate in the study through

in-kind contributions by assuming a portion of the work involved in the study.

Remarks: Total estimated cost of a 4-year project investigation: $670,000; first year requirement: $85,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Westside Irrigation Project, Wyoming.

Location: Northern Wyoming west of the Big Horn Irrigation Canal on the left bank of the Big Horn River in Washakie and Big Horn counties between the cities of Basin to the north and Worland to the South.

Description: The Westside study would examine the feasibility of irrigating 9,000 acres of land located near Worland, Wyoming. Water for the proposed Westside irrigation project would be supplied by the Big Horn Canal which diverts water from the Big Horn River near Worland, Wyoming. The river itself is controlled by Boysen Dam and Reservoir. About 12,800 acres are irrigated above the proposed Westside project and the return flow from this area would be available for the project. This would necessitate the enlargement of the capacity of the canal as well as modifications to other canal structures. Fifteen pumping plants would lift water from the canal with each pump serving an area about one mile wide. The economic feasibility of the project is based on an add-on unit of 160 acres for the present operators below the canal.

Justification: This irrigation project would convert marginal rangeland into productive irrigated cropland. Because of the area's aridity, irrigation is necessary to make farming economical. A special report by the Bureau of Reclamation showed that the add-on project is feasible and the irrigators have the ability to pay for the project under Reclamation law.

Project interest: The Big Horn Basin Irrigation Development Association and the State of Wyoming have long been interested in development of a project in the area. Both of these entities have conducted studies within the last several years. The Bureau is working on this proposal at their request. There is a strong possibility that Westside could be a joint State-Federal endeavor with an equal sharing in the funding of the project.

Remarks: The total estimated cost of this three year study is $260,000 with $25,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Crow Creek Indian Reservation Area, South Dakota Pumping Division, Pick-Sloan Missouri Basin Program.

Location: Crow Creek Indian Reservation, South Dakota.

Description: This study would assess the irrigation potential of lands located within the Crow Creek Indian Reservation. All aspects of plans appearing to have good potential would be assessed to determine whether to pursue a subsequent more-detailed study. Examination may also be made of the possibilities of furnishing a water supply for private irrigation and rural-domestic water systems in nearby areas located off the reservation. No major environ-

mental problems are anticipated and an abundant supply of good quality water exists in Lakes Sharpe and Francis Case behind Big Bend and Fort Randall Dams on the Missouri River.

Status: No specific study has been made of the entire Crow Creek Indian Reservation. Preliminary studies were completed in 1959 for the 4,420-acre Joe Creek and the 5,444-acre Culdesac Units. A feasibility study was completed in 1970 for the 5,900-acre gravity irrigated Fort Thompson Unit, but the report was never released. This Unit was dropped from active consideration when 2,385 acres within the Unit plan of development were privately developed as the Northwest Irrigation Project. No studies are underway or proposed by the Bureau of Indian Affairs for the Reservation. Reclamation work has been initiated on the study in fiscal year 1983.

Justification: The Crow Creek Indian Reservation is a chronic pocket of poverty that needs to develop a viable economic base capable of employing and supporting Tribal members. This Tribe lost a significant portion of its prime agricultural bottom lands (19,799 acres) in the "take area" for the two Missouri River main stem reservoirs (Lakes Sharpe and Francis Case). They desire to maximize and stabilize production from remaining limited acreage, by integrating their Tribal dryland ranching with irrigated agriculture. In addition, the Tribal desires assistance in developing a reservation-wide development plan in order to quantify their claims to Indian water rights under the Winters Doctrine.

Local interest: The Crow Creek Sioux Tribe has made development of irrigated agriculture a high economic development priority. The Tribe has required that Reclamation conduct this investigation. The Bureau of Indian Affairs will cooperate in the conduct of the study.

Remarks: The total estimated cost of this two year investigation is $200,000 with $50,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UM

Project: Rapid City Regional Water Supply, Cheyenne Division, Pick-Sloan Missouri Basin Program.

Location: Metropolitan and Regional Rapid City Area, Pennington County, South Dakota.

Description: The purpose of this study is to determine the long-range multiple-purpose water supply needs of the metropolitan and regional Rapid City area; assess the capability of presently available supplies to meet the long-term needs; and, if future supplemental water supplies are determined to be needed, provide preliminary information and recommendations on development options available from undeveloped resources. Primary emphasis will be focused on municipal and industrial water supplies for the city, Ellsworth Air Force Base, and surrounding suburban and rural areas. Environmental, rural-domestic, and irrigation water supply needs will also be investigated. Capability of ground surface water resources to meet projected needs will be determined, with emphasis on existing available water supplies, especially those contained in Deerfield Reservoir (Rapid City Project) and Pactola Reservoir (Rapid City Unit).

Status: There is no currently valid, comprehensive water supply study available for the Rapid City regional area. Construction of Deerfield Dam was completed in 1947, with first storage water becoming available in 1948. Construction of Pactola Dam was completed in 1956 and first water became available in 1958. Water supply analyses done in conjunction with the Deerfield Dam safety investigations (1975) indicated that presently reserved storage space in the two reservoirs would probably not meet year 2020 demands. Preliminary work has been initiated on this study in fiscal year 1983.

Justification: Regional study area growth has exceeded previous planning projections. Ellsworth Air Force Base depends on the Rapid City municipal water supply; requests are expected for irrigation water service to lands not now served; and further growth is expected in high-water-use industries such as meat packing and industrial alcohol production. In addition, there is potential for mineral and energy developments in western South Dakota.

Local interest: This study has been requested by a resolution of the Rapid City Common Council and enjoys the support of the Mayor and Director of Public Works. The study has been included in the recent adoption of the South Dakota State Water Plan by the South Dakota Legislature. The Department of Water and Natural Resources has ranked the study among the top five priorities for accomplishment during fiscal years 1983 and 1984.

Other entities supporting this study include the Rapid Valley Water Conservancy District, the Black Hills Conservancy Sub-District, the Commanding Officer of Ellsworth AFB, the 6th Planning District, the Water Committee of the Rapid City Chamber of Commerce, the League of Women Voters, and several Rapid Valley development groups.

Remarks: The total estimated cost of this 2 year study is $125,000 with $50,000 required for the first year.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: UC

Project: Saline Water Use and Disposal Opportunities Unit, Colorado River Water Quality Improvement Program.

Location: Colorado River Basin—portions of Arizona, Colorado, New Mexico, Wyoming, Utah, Nevada, California, and affected adjacent areas.

Description: Public Law 93-320, dated June 24, 1974, directed the Secretary of the Interior, among other things, to expedite the Colorado River Water Quality Improvement investigations through the assessment of new technology on a basinwide salinity control basis. The Saline Water Use and Disposal Opportunities Unit would provide detailed study and analysis of specific implementation opportunities for use and disposal of saline water. One prospective solution to be studied is an "AQUATRAIN" proposal by W. R. Grace and Company. The "AQUATRAIN" proposal consists of a pipeline stretching from Wyoming to the California Pacific Coast, about 1,200 miles in distance.

Status: Preliminary study of opportunities for saline water use and disposal in the Colorado River Basin began in May 1980. On

April 22, 1982, the Department approved initiation of a study that would examine the technical and economic viability of using saline water as the transport media for a commodities transport pipeline from the Upper Colorado River Basin to the Lower Colorado River Basin and the West Coast. The study, a part of the Saline Water Use and Disposal Opportunities Unit, will be conducted by the Upper Colorado Region's Saline Water Transport and Use Office now established in Denver, Colorado. The office will be staffed jointly by Reclamation and private industry personnel, assisted by other Federal and State agencies. W. R. Grace and Company will assume the lead role for developing the commodities transport technology and formulating a consortium of private interests to finance the non-Federal share. The Colorado River Basin Salinity Control Forum will continue to address water rights issues and other related concepts that as a matter of State rather than Federal jurisdiction.

Justification: The Colorado River carries over 10 million tons of salt annually past Hoover Dam. The Department of the Interior with the Bureau of Reclamation as lead agency has been charged with the responsibility of developing plans for controlling salinity in the reaches of the Colorado River at or below 1972 levels as measured at three locations on the river. Lower Colorado River water users claim the present salinity concentrations often exceed the critical level. The W. R. Grace and Company's proposed "AQUATRAIN" could remove an estimated 170,000 tons of salt per year from the Colorado River and could help control a major source of salt pollution. Joint ventures of this nature, among Federal, State, and industrial interests, have the potential for ultimately benefiting all parties concerned.

Local interests: The conferees of the Colorado River Basin States support the Colorado River Water Quality Improvement Program. The Department of the Interior supports the program because of its high potential for removing saline water from the Colorado River. W. R. Grace and Company and other private industries are actively pursuing the proposal because of the high potential for transporting and marketing coal on the West Coast.

Remarks: The investigation is estimated to cost $2,200,000 over a three year period. First year funding needs are $500,000.

BACKGROUND STATEMENT, GENERAL INVESTIGATIONS, PROJECT INVESTIGATIONS, REGION: MP

Project: Sites Reservoir Investigation, Sacramento River Division, Central Valley Project (CVP).

Location: The proposed Sites Reservoir would be located approximately 8 miles west and northwest of the community of Maxwell in the western foothills of Glenn and Colusa Counties in northern California.

Project data: Sites, an offstream pumped-storage reservior with a maximum capacity of 1,800,000 acre-feet, would be the major storage reservoir on the west side of the Sacramento Valley. The reservoir would be contained by two dams and 12 dikes. The reservoir's active capacity would be 1,665,000 acre-feet with a 135,000 acre-foot minimum pool. The reservoir spillway would be a minor structure

at a small saddle north of Golden Gate Dam, the northernmost of the two dams which would impound the reservoirs. The ungated spillway would discharge up to 250 cubic feet per second into a branch of Hunters Creek. Sites Reservoir would be filled by a pumping-generating plant supplied through the existing Funks Reservoir. Power would be generated during releases to the service areas. Water for service area requirements would be released back to the Tehama-Colusa Canal for conveyance. Water supplies for the CVP in the Delta would require a connecting conveyance between Funk Reservoir and the Sacramento River.

Description: A multiobjective investigation would be conducted to determine the viability of constructing Sites Reservoir as a water supply feature of the CVP. Included would be alternatives of various sizes of Sites Reservoir. Various combinations of uses of the new storage and yield would be evaluated. If determined to be viable a plan would be formulated to provide most of the following benefits: new firm water supply for the Central Valley Project both for instream uses including fishery improvement and salinity repulsion and out-of-stream uses—muncipal, industrial, and agricultural; energy generation; and rcreation opportunities.

Engineering data and analysis will include gathering and analyzing information on geology, hydrology, sedimentation, seepage, water quality, power production and marketing, and designs and cost estimates. Benefits and costs, both monetary and non-monetary, will be presented. A pulic involvement program would be needed throughout the planning process.

Status: Sites Reservoir was studied in FY 1978 as the main water supply facility for the West Sacramento Canal Unit. This potential 1,800,000 acre-foot offstream storage reservoir, operated in conjunction with existing CVP and Solano Project features, would develop a new firm yield of 570,000 acre-feet.

During FY 1982–1983, Sites Reservoir was included in the study of alternatives to enlarging Shasta Reservoir. Operation studies were conducted to determine the amount of yield that could be generated by the project by integrating it into the CVP.

Justification: Indications are that additional developed water supplies will be needed to meet the needs of the State of California. Recent projections by the Department of Water Resources show that statewide net water use is expected to increase to 37.3 million acre-feet by 2010, while the developed dependable supply currently is about 33 million acre-feet. Water quality and instream use requirements will compete for available supplies and, could further increase the short fall. Urban and agricultural uses each account for approximately one-half of the projected increase.

Local interest: Interest in additional water supply development has been expressed in the San Joaquin Valley and in Southern California. The State of California is actively exploring opportunities for additional storage development. The local congressmen have expressed interest in storage development at Sites and have been instrumental in funding studies of it as a part of the Enlarging Shasta Lake Investigation.

Remarks: Total estimated cost of 3-year feasibility investigation would be $750,000, with a first-year funding requirement of $350,000.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, D.C., May 9, 1983.

Hon. JAMES A. MCCLURE,
Chairman, Committee on Energy and Natural Resources,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request of March 22, 1983, for the views of the Office of Management and Budget on S. 622, a bill "To authorize the Secretary of the Interior to undertake feasibility investigations."

The Office of Management and Budget concurs in the views of the Department of the Interior as expressed by Mr. Robert N. Broadbent, Commissioner of the Bureau of Reclamation, in his testimony of May 2, 1983, before the Subcommittee on Water and Power. Accordingly, we have no objection to the enactment of S. 622 if it is amended to reflect the changes outlined in Commissioner Broadbent's testimony.

Sincerely,

JAMES M. FREY,
Assistant Director for Legislative Reference.

U.S. DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, D.C., October 6, 1983.

Hon. JAMES A. MCCLURE,
Chairman Committee on Energy and Natural Resources,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: In a recent telephone conversation between Mr. James Wiley of this office and Mr. Russ Brown of your staff, it was discovered that the description of the New Melones Conveyance System Study, Central Valley Project, California, that was submitted with our testimony on S. 622 was silent on the subject of fishery resources. Since the scope of our study contemplates the investigation of fishery enhancement opportunities, we would appreciate your consideration of the addition of fishery investigations to the description of this study in your Committee's consideration of S. 622.

If you have any further questions about this matter, please feel free to let us know.

Sincerely yours,

_____ _____,
(For Robert N. Broadbent, Commissioner).

ADDITIONAL VIEWS OF SENATOR CHAFEE

During markup of S. 622, I offered an amendment that would have required cost-sharing for water feasibility investigations, reports, studies and surveys on a 75-percent federal, 25-percent non-federal basis.

The rationale for my approach is simple. Anyone who has seen our federal water resources process at work recognizes the scattergun effect of the program. We fail to target projects. The states and local government take whatever federal study funds are made available, and consequently there is little constraint to prioritize projects.

We only have to look at the results to see how this process has served us. According to a General Accounting Office survey of 115 Bureau of Reclamation feasibility studies conducted from 1964 to 1981, 85—or 75 percent—did not result in project recommendations. The cost to taxpayers was $35 million.

Factors resulting in project denials included poor economic justification, inadequate local support, disagreement between federal and local entities and the lack of local authority to contract for the proposed project.

The benefits of a cost-sharing approach are two-fold. First, since state and local governments would fund a portion of the study, there would be more federal money available for necessary studies. Second, and perhaps more important, only those studies which have substantial local support would be undertaken. This would result in the completion of high priority studies at a faster rate than under the current system.

Cost sharing for feasibility studies is gaining acceptance in the Congress and in the Administration. A provision similar to the amendment I offered to S. 622 was adopted by the House last year, but it died in the Senate. Recently, the House Public Works Committee reported a bill which calls for a 50 percent—50 percent cost share for feasibility studies on Corps of Engineers projects. The Corps and others in the Administration have endorsed this approach. When the water resources bill comes to the full Environment and Public Works Committee, I plan to offer a similar cost-sharing amendment.

Although my amendment was not adopted by the Committee, I still believe it is the proper approach, and I will continue to press forward on this matter.

JOHN H. CHAFEE.

MINORITY VIEWS OF SENATOR METZENBAUM

I wholeheartedly endorse the additional views expressed by Senator Chafee and for those reasons opposed S. 622.

Cost sharing will inject a measure of discipline in the water project planning process, increasing the likelihood that only high priority projects with strong local support will be built. The result will be better targeting of limited federal dollars and a more sensible, rational and effective national water resource policy.

HOWARD M. METZENBAUM.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee notes that no changes in existing law would be made by the bill, S. 622, as reported.

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